

Amendment to Richardson, 09/835,5431 March 2003

selected reflective optical switching element directing the selected input light beam to a first output;

selecting a second reflective optical switching element; and,

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varying a focus of said selected input light beam to focus said selected input light beam on said second selected reflective optical switching element, the second selected reflective optical element directing the selected input light beam to a second output.

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21. (Twice Amended) An optical crossbar switch for switching input light beams, the switch comprising :

at least one adaptive optical element having a variable focal length, the adaptive optical element located in a path of a selected input light beam; and,

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a plurality of selectable reflective optical elements, the selectable reflective optical elements alternately selectable and interposable in the path of the selected input light beam to direct the selected input light beam to a corresponding one of a plurality of outputs;

wherein the plurality of selectable reflective optical elements are located within a range over which said adaptive optical element is capable of focusing the selected input light beam such that the selected input light beam can be focused on any selected one of the plurality of selectable reflective optical elements by adjusting the focal length of the at least one adaptive optical element.

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25. (Once Amended) An apparatus for directing an optical signal from an input channel to a selected one of a plurality of output channels, the apparatus comprising:

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a plurality of individually switchable reflective elements located to intercept an optical signal from the input channel, the plurality of reflective elements

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having a plurality of selectable configurations, each of the configurations directing the optical signal to a corresponding one of the output channels, in each of the configurations the optical signal incident on a selected one of the reflective elements; and,

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at least one adjustable focus optical element in an optical path between the input channel and the plurality of reflective elements, the at least one adjustable focus optical element configured to focus the optical signal onto a currently selected one of the reflective elements and, upon a different one of the reflective elements becoming the currently selected one of the reflective elements, to vary a focus of the adjustable focus optical element to focus the optical signal onto the different one of the reflective elements.

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38. (Once Amended) A switch for switching optical signals the switch comprising:

a plurality of optical input channels and a plurality of optical output channels;

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a plurality of individually switchable reflective elements, each of which is switchable between a reflecting state and a non-reflecting state; and

a plurality of adjustable focus optical elements, each of the adjustable focus optical elements in an optical path between a corresponding one of the input optical channels and the plurality of individually switchable reflective elements, each of the adjustable focus optical elements capable of selectively focusing an optical signal from the corresponding one of the input channels onto any one of a plurality of the plurality of individually switchable reflective elements; wherein the switch is configured so that an optical signal may be directed from a first one of the input optical channels to a first one of the output optical channels by switching a first one of the plurality of

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reflective elements to its reflecting state and adjusting a focus of the at least one adjustable focus optical element corresponding to the first input optical channel to focus the optical signal onto the first reflective element and the optical signal may be directed from the first one of the input optical channels to a second one of the output optical channels by switching a second one of the plurality of reflective elements to its reflecting state and varying a focus of the at least one adjustable focus optical element corresponding to the first input optical channel to focus the optical signal onto the second reflective element.

39. (Once Amended) A method for directing an optical signal from an input channel to a selected one of a plurality of output channels, the method comprising:

actuating a reflective element to direct an optical signal from the input channel to a selected one of the output channels; and,

varying a focus of at least one adjustable focus optical element to focus the optical signal onto the reflective element.

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49. (Once Amended) A method for redirecting a radiation beam in an optical crossbar switch comprising a plurality of individually selectable reflective optical switching elements, the method comprising:

focusing a selected radiation beam on a first selected reflective optical switching element;

selecting a second reflective optical switching element; and,

varying a focus of the selected radiation beam to focus the selected radiation beam on the second reflective optical switching element.

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